4-24-2020

Ames Laboratory Glovebox Cleaning

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TSM416 Technology Capstone Day, Apr 24, 2020
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Ames Laboratory Glovebox Cleaning

AMES LABORATORY
Creating Materials & Energy Solutions
U.S. DEPARTMENT OF ENERGY

Client: Ames Laboratory, Ames, Iowa

Problem Statement

- The removal of pyrophoric materials from inert atmosphere chambers presents the potential for injury or damage to property upon reacting to oxygen or water. In order to minimize the risk of an incident occuring, equipment and/or procedural recommendations need to be developed to create a standard way of disposing of these materials.

Objectives

- Determine the feasibility of designing or purchasing equipment to better dispose of pyrophoric materials.
- If equipment is not feasible, develop a best practices guide to create a list of recommendations to use when cleaning gloveboxes.

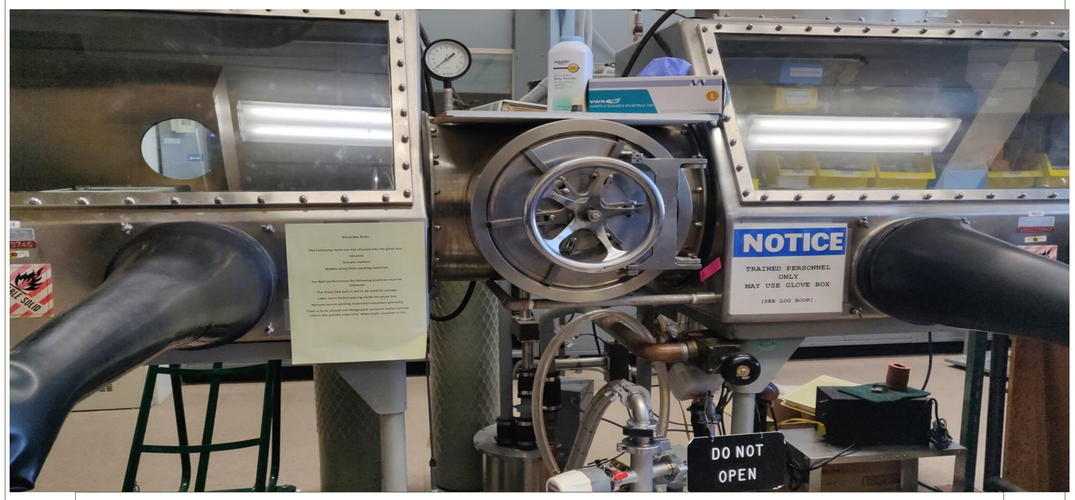
Constraints

- Budget of $1,000
- Must be completed by 3/13/2020
- Identify equipment or procedural changes to address pyrophoric hazards

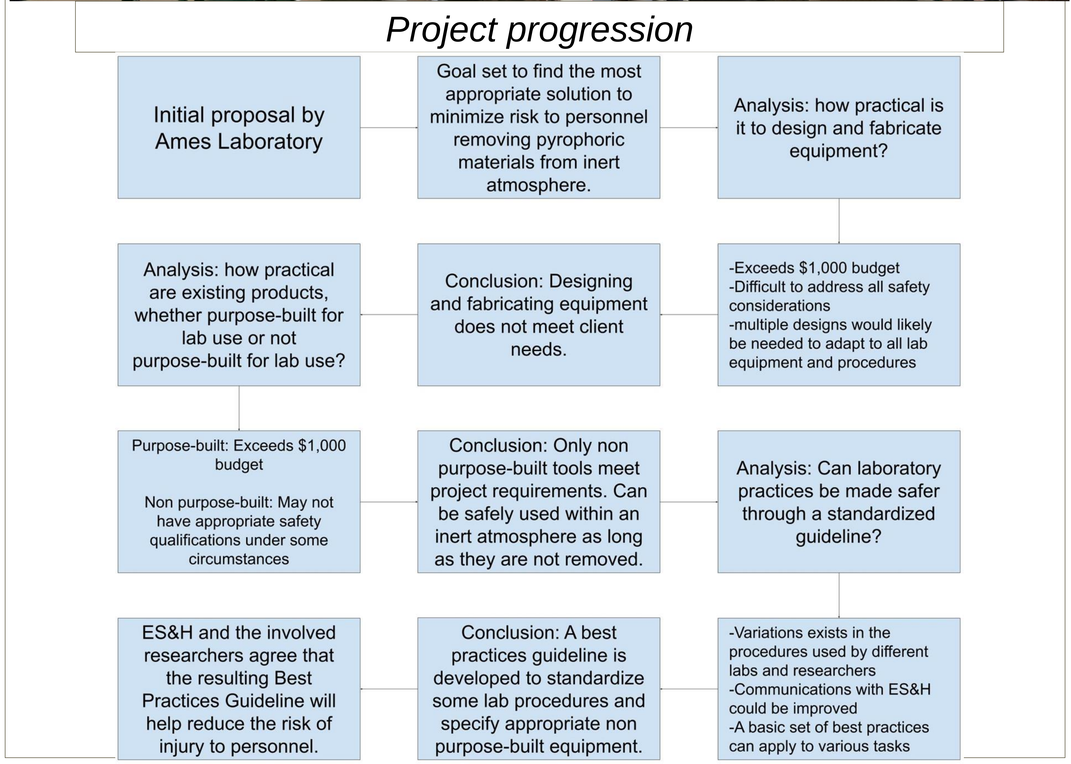
Scope

- To create a guideline to be utilized in the laboratory that is generic enough that it would work in most circumstances and still be specific enough to be used as a basis for specific SOPs.

Glovebox chamber used to bring in and remove materials



Project progression



Methods/Approach

- **Laboratory tours:** Used to get an understanding of current cleaning procedures. It also allowed us to find the root cause of the problem.
- **National Laboratory Research:** Used to gather information on procedures performed by other labs. We were able to compare the differences between labs.

Major Deliverables

- **Best Practices document**
  - Provides a list of recommendations that Ames Laboratory should use
- **Final Report**
  - Shows the process of how we achieved our goals.
- **Measures of success:**
  - Recommendations prevent hazards in the laboratories
  - Client satisfaction

Recommendations

- Review our Best Practices Document
- Ensure our recommendations can be safely used in the laboratories
- Make any potential changes
- Create an SOP based on our guide

Personal Communication

- Sarah Morris-Benavides
- Daniel Kayser
- Matthew Besser
- Roger Rink

Acknowledgements: Authors are grateful to Sarah Morris-Benavides, Daniel Kayser, Matthew Besser, and Roger Rink for the opportunity to work on this project. Project was co-funded by the differential tuition.